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A Jubilee Retrospect.

By

O. Charnock Bradley, M.D., D.Sc., Ch.B., M.R.C.V.S.

PRINCIPAL, ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.

"Whereas it is expedient . . . to distinguish between qualified and unqualified practitioners."

It is possible—it would not be charitable to say probable—that a considerable proportion of the members of the veterinary profession are unaware that the foregoing are the opening words of the preamble to the Veterinary Surgeons Act of 1881. However this may be, they contain the very kernel of the reason why there should be a legally constituted veterinary profession. But significant though the words are, we, in the present year of grace, are more interested for the moment in the date attached to the Act. On August 27th, 1931, the veterinary profession will have had an existence of 50 years, and it is natural that the attainment of a Jubilee should be recognised as an event worthy of some degree of commemoration. One of the most grateful tasks that can be imposed upon anyone is that of examining in retrospect progress made during a period of which he has had personal experience; and the task is all the more grateful if progress has been more than commonly noteworthy. Such a retrospect has been demanded of the present writer, who, though he cannot claim to have known the whole period since the passing of the Veterinary Surgeons Act, has knowledge that covers 40 of the 50 years since 1881.

At the beginning of the last decade of the nineteenth century there were only slight indications of the great and far-reaching changes that the first 30 years of the twentieth were to produce in the scope and character of the work of the practitioner of veterinary science. It is necessary to express the change in these terms, for in the early 'nineties there was little but general practice open to the young graduate, and the animals with which he had to deal were practically solely the horse, in towns, and cattle, in the country. Certainly the town practitioner was expected to know something of the ailments of dogs and cats, but only truly prophetic vision could have permitted envisagement of the creation of the numerous flourishing canine and feline practices of to-day. And it is certainly safe to say that none could have foreseen the rapid numerical growth of appointments both at home and abroad.

It is, however, not the intention of the writer that these notes should deal with the well-known modification that has taken place in the practice of veterinary art and science during the last half-century; but rather to sketch briefly and very inadequately, changes in professional education during that time.

From the time of the creation of the Royal College of Veterinary Surgeons in 1844 until 1876 the curriculum consisted of two Sessions; and contained one examination only up to the year 1873, when two examinations were imposed. From 1876 to 1895 the curriculum extended over three Sessions with an examination at the end of each.

The year 1895 marked a distinct epoch in the history of veterinary education in this country. In that year the curriculum was extended to four sessions and the number of examinations was correspondingly increased. Further, the examinations, hitherto entirely oral in form, became both written and oral. There were those who received the reformation without conviction, and others who regarded it with undisguised and serious misgiving. Those who regarded the change as being too rapidly progressive—if not worse—were partly influenced in their opinion by the recollection that only two years before a real preliminary examination in general education, equal in standard to that required of medical students by the General Medical Council, had been imposed on all prospective veterinary students. There was reason, therefore, for appreciating, if deprecating, the attitude of the ultra-cautious.

But the mere recital of alterations in the length of the curriculum and the character of the examinations affords an imperfect index by which to estimate the difference between the professional education of the veterinary student of 40 years ago and his successor of to-day. Then, much of the instruction he received was given in the form of didactic lectures, with practical work and demonstrations as a very secondary matter; and no better illustration of this could possibly be found than the way in which the subject of anatomy was taught in one, at any rate, of the schools. The lectures on the subject at the particular school now in mind consisted of the simple and unadorned statement of facts, with never a specimen, dissection, or even a diagram in illustration. How the attention of the class was obtained and retained—and, in large measure, it was—was a marvel. Perhaps this particular anatomy class was unusual in so far as the lectures were concerned; and it may be that in other schools 40 years ago systematic lectures were given differently. And it may be that the method of instruction as given in the dissecting-room was also peculiar. But there is good ground for assuming that the general conditions in the practical anatomy rooms of the various schools were much alike. Those were the days before it was considered necessary to use any form of preservative in the preparation of the subjects for dissection; and consequently dissection was performed as rapidly as possible. To save time one subject was dissected for muscles, another for blood vessels and nerves—much as used to be the practice in the dissection of the human body by the medical student. Obviously, the topography of structures, and particularly of the soft organs of the thorax and abdomen, could be studied only in the most imperfect fashion; and, consequently, the acquirement of anatomical knowledge useful in later stages of the curriculum and in

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subsequent practice, was seriously hampered, when not rendered actually impossible.

A procedure in the dissecting-room that I feel sure must have been peculiar to the school with which I was connected, and therefore cannot be taken as indicating methods in operation in veterinary schools in general, was that of requiring the students to " say " their dissections. Each day the teacher made a single visit to each of the parts being dissected and required the students engaged on the part to " say," that is, recite as correctly as possible the statement made in the text-book relative to a particular muscle, vessel or nerve exposed in the dissection. Obviously, it was not difficult to arrange beforehand what particular structures were to be " said," and, with a little ingenuity, it was possible to ensure that a particular student should have to " say " a particular structure.

The horse, of course, was the only animal the whole of the anatomy of which was even thus imperfectly studied. Scraps of information relative to the organs of ruminants were occasionally provided, but only as incidental facts of minor importance. To the anatomy of the dog and fowl, of course, the very scantiest of attention was paid; canine medicine and surgery being then in the condition of an early embryo, and diseases of poultry being held as possibly existing but somewhere below the line of vision of the veterinary surgeon.

Apart from a certain amount of clinical demonstration—of horses only—and a reasonably good, but short, course of practical chemistry, instruction outside the lecture-room and the dissection-room was very scanty. Certainly a few sections of normal tissues and rather more of abnormal organs and tissues were distributed and examined in a perfunctory manner, but laboratory courses in histology and pathology bore but faint resemblance to those of to-day. It was a great advance when a short course of lectures on bacteria was introduced—at a late hour in the afternoon and voluntary so far as attendance was concerned; and it was considered that much progress had been made when zoology (lectures only, of course) was added and the former subjects of Horse Pathology and Cattle Pathology were rearranged and rechristened Medicine, Surgery, and Obstetrics.

Looking back, the impression one gets is that there has been less change in the teaching of chemistry—and change here there certainly has been—than in any other subject of the curriculum; and this doubtless because less change was needed. The teacher of to-day would be astounded, not to say insulted, were he to be given to understand that his only essential equipment was a blackboard and a piece of chalk. Doubtless when, about the middle of last century, John Barlow, a teacher with ideas and ideals much in advance of his time, introduced the first microscope used in the instruction of the veterinary student of this country, he was regarded as a daring innovator with decidedly luxurious leanings. And yet he might have prophesied with safety that, within a century, the annual bill for microscope *repairs* would become no negligible item in the accounts of veterinary schools.

While methods of instruction have gradually changed and the lecture-room has relinquished many of its claims to importance and ceded them to the laboratory, subjects of instruction have been amplified; sometimes by subdivision, sometimes by addition. Zoology was added with the introduction of the current four-years' curriculum; Hygiene and Dietetics and Materia Medica were given individual status, and certain heterogeneous fragments were collected together and called Stable Management. At the same time, a re-grouping resulted in the creation of specific examination subjects of Surgery and Obstetrics and Medicine, with the recognition of Meat Inspection as worthy of inclusion in the examination syllabus.

Many, perhaps most, of the foregoing facts relative to examinations are well known to members of the profession; but what is not so widely known, or, if known, adequately realised, are the concurrent changes in educational standards and ideals. It would probably be incorrect to say that, under the old régime of 40 years ago, the sole aim of the schools was to produce what was then called (and is still frequently so called) the " practical " veterinary surgeon; but if it were not the only ideal it was certainly the chief aim. During the last 30 or 40 years educational aims and standards have undergone a notable amount of remodelling. The need for the cultivation of scientific vision and a broad mental horizon has slowly forced itself into prominence, and the teacher of the veterinary student of to-day is convinced that his chief function is the production of a reasonably good background against which subsequently ascertained facts may be placed in proper perspective. To change the metaphor, the teacher's chief business, he is now persuaded, is the production of a suitable tilth and not the full growth of the crop. The institution of University Degrees in Veterinary Science and the establishment of post-graduate diplomas might well be advanced as an indication of this change of view; and the recognition by Universities of the courses of instruction given in the veterinary schools may reasonably be regarded as showing that academic bodies outside the veterinary profession admit the existence of a change of spirit.

Lastly, but by no means of least importance, the veterinary student of to-day is different from his predecessor of 40 years ago. Then, he was all too often actuated by the idea that the veterinary profession was one that afforded a congenial occupation and one that could be entered without undue difficulty. This must not be understood to mean that all veterinary students were alike: there were those who were students in actual fact, but there were far too many who could only claim the title by courtesy. The "chronic" was far from being a *rara avis*, and was regarded as somewhat picturesque. Now-a-days the real slacker is rare and public opinion is not in his favour. Moreover, the school he honours will almost certainly ask him to put in his non-attendance at some other institution. Again, 40 years ago the admission of a University graduate to a veterinary school was an event: to-day it is almost a commonplace. The significance of this is obvious.

Dr. Willoughby, Medical Officer of Health for the City, in his annual report, says :—" The high standard of cleanliness in wholesale and retail butchers' shops has been maintained. The transport and handling of meat within the markets show a steady improvement, but conditions are still a long way from the standard aimed at when the Regulations were instituted."

Nottingham City Council have agreed to seek Parliamentary powers to close existing private slaughterhouses subject to compensation. The powers are required " in order that the Council may be in a better position to proceed with the erection of a public abattoir."

1881—1931.

By
F. L. Gooch, F.R.C.V.S., Stamford.

Our Predecessors.

Our forebears in the field of veterinary surgery and medicine were chiefly farmers' sons who, during the early part of their life, had the care of animals in both health and disease. In directories they were described as "Farriers and Gelders," or "Cattle Doctors," and I have a photograph of my grandfather's house at Corpusty, in Norfolk, which shows the kind of sign they had on their houses. The great majority of those in Norfolk cultivated some land as well as attending to their professional duties.

The sheet-anchor of nearly all treatment during the latter part of the last century—and quite up to 1881—was plebotomy, both local and general: I have myself extracted from the jugular vein of the horse two gallons or more of blood, at one time. As an example of the extravagant use of plebotomy, I well remember staying with my grandfather in the early 'seventies, when the message came that an attempt had been made to bleed a horse on both sides of the neck, but no blood could be obtained. When he arrived he found the animal had ruptured a large vessel in the abdominal cavity and had died in half an hour. Another treatment, which is never carried out now, was that of giving cattle their medicine in the form of a ball; even in horses this is seldom practised nowadays.

Some Old-time Prescriptions.

Some extraordinary prescriptions for ailments were dispensed. I will only give one or two as examples, culled from a copy of *The Gentleman's Jockey and Approved Farrier*. (i) A Purge: "Take of the strongest alewort one quart; honey, a quarter of a pint; London treacle, 2 ozs.; mix and brew them all together, and give to horse blood warm: Then keep him upon his bit for six hours. Afterwards clothe him and well litter, and give him a sweet mash of white water; this broth purgeth and comforteth. Two or three days after give him the following drink. Take a pint of white wine and put into it one oz. of senna and let it steep all night; next morning strain it and put in one oz. of the best aloes in fine powder, half an oz. of agarick, spoonful of the powder of liquorish; mix and brew them altogether and give blood warm. Ride him gently for a quarter of an hour after, then clothe and keep warm, nor let him eat or drink for six hours. The next day let him blood prick in the third furrow of his mouth, and if his blood be bad take two quarts, but if good scarce a quart. You may also put in his drink either powder of brimstone, fenugreek, turmerick or elecampane: one or more together, one spoonful at a time. This is good to cool the blood, purge choler, and other peccant humour, and to purify and refine the blood."

(ii) *Diseases of Mares in Foal.*—If you have a mare barren, get good store of the herb *Agnus Castus*, to be boiled in the water she drinks, if you would have her fruitful. Then boil good store of motherwort in the water. If she lose her belly, which sheweth a consumption of the womb, you shall then give her a quart of brine with mugworth boiled therein. If you would have your mare cast her foal, take a handful of betony and boil it in a quart of ale, and it will deliver her presently. If she cannot foal, take the best horse-mint and either dry it or stamp it, and take the powder or the juice and mix it with strong ale, and give it to the mare and it will help her. If your mare, from former bruises or strokes, be apt to cast her foal, as many are, you shall keep her at grass very warm and once a week give her a warm mash or drink, this secretly nourisheth beyond expectation."

(iii) "*Sinew Strain.*—Take a handful of blue clay and as much bolearmoniack as will fill an eggshell, and the whites of three or four eggs, one oz. of oil of turpentine, half a gill of brandy, half a gill of white-wine vinegar, and work this a quarter of an hour with your hand. Then lay it on with some flax, as you do a charge, to the back sinew. It fails not, unless it be an old clap."

(iv) *Treatment of Milk Fever.*—A very successful drench given in the 'eighties, and what we should consider a very risky one to administer, was:—℞, Ol. Tereb, 1 pint; Ol. Lini, 1 quart. Mix well and administer carefully.

This drench was given very successfully without the aid of the stomach tube and although we might think many animals would be killed during the administration, yet from personal knowledge I know hundreds of animals were so treated with good results and with no other remedy.

(v) The treatment, as recorded by an Army veterinary surgeon, for colic or gripes, was: "First take two or three quarts of blood immediately, which may be repeated if necessary and, if no inflammation, ℞ Barbadoes aloes ʒiii, Venice turpentine ʒii. Mix and give as a ball, to be repeated every 12 hours, if the symptoms do not subside. This to be followed with two to four ozs. of turpentine in two quarts of linseed gruel."

Teaching of our Schools.

In 1880 there were six professors at the College, and the subjects taught in the *First Year* were: Chemistry, Botany, Rudiments of Anatomy, Materia Medica, Toxicology; *Second Year*: Physiology, Histology, Helminthology and Advanced Anatomy (Specific and Comparative); *Third Year*: Pathology (Horse and Cattle), Morbid Anatomy, Parasitic diseases.

Very little was then known of the use of the microscope, as the only time we used it was in Histology and Morbid Anatomy. In the third year we had clinical lectures and were allowed to perform certain operations. In each Session there were three Clinical Clerks appointed whose duty it was to carry out the instructions of the Professor attending, administer medicine, dress wounds and assist at all operations and *post-mortem* examinations.

To illustrate our then existing knowledge of pathology, I will quote from a paper read before one of the divisions of the National in 1883 by a Past-President of the National, the subject being "Anthrax." In speaking of the *causes* of anthrax the essayist said: "Atmospheric influences favour the development of the disease, it being prevalent in hot seasons on badly drained soils, and in wet seasons in rich pastures. Animals that are suddenly brought from a spare diet to a rich one are very susceptible to the disease. Artificial foods and manures are also a prolific cause of the disease—the former from producing a rapid tendency to fatten and the latter from its effects on the production of the soil.

"*Want of Exercise.*—This is more especially noticed in young animals and is in my opinion, one of the great causes of that form of anthrax known as black leg.

"*Forms of Anthrax.*—I purpose speaking of those forms of anthrax mostly met with in other districts, *viz* :—anthrax by contagion in the horse, spleen apoplexy in cattle and sheep and black leg."

Examiners.

In the early 'eighties the examiners were sometimes very unfair to the students in the questions they required the student to answer. I will give one illustration. The examiner in morbid anatomy put this question to nearly every one of the Final Year Students :—"What is the appearance of the condition of the spinal cord of a dog that has died of hydrophobia?" Twelve students were examined that night, not one had seen a case of hydrophobia, not one had received a lecture on the disease, and only one of the 12 had read anything of the disease in a text-book, and that student obtained very high marks in the subject. The examiner had published a small treatise of the disease 14 days before the examination and that one student had, fortunately, seen a copy.

Fellowship Examination.

I enclose a copy of all the questions for the written examination given to the members sitting for the Fellowship degree in 1886, and if my readers peruse them I think they will agree with me that to pass that examination, one must not only have had a good knowledge of the subjects taught for one's membership degree, but must also have retained a good knowledge of the subjects one passed in one's scholastic examinations, not to mention the oral questions that were put to one by the examiners.

R.C.V.S. Fellowship Examination—June 18th, 1885.

Comparative Anatomy and Physiology.

1.—Describe the origin, distribution, and functions of the Pneumogastic Nerve.

2.—Describe the characteristic features of the dentition in Rodents, Ruminants, and Carnivora.

3.—What is the specific gravity of the Urine of the Horse? Give a short account of its composition, and state in what respects it differs from the urine of carnivorous animals.

Therapeutics.

What are the physiological actions of Digitalis, Opium, and Belladonna? and state under what circumstances you would employ them medicinally.

Pathology.

1.—Describe the different kinds of Gangrene, the causes to which they are due, and the characteristic and distinctive signs of each kind.

2.—Describe the difference in appearance in the Lung of an Ox affected with ordinary Pleuro-pneumonia, and that affected with contagious or specific Pleuro-pneumonia.

Epizoötiology.

1.—What causes are likely to make Glanders an epizoötic disease, and how are they to be averted?

2.—Describe the measures necessary for the eradication of contagious Pleuro-pneumonia in a country invaded by it.

English and Latin.

1.—Write a short essay on Competition, the advantages of Travelling, *or* Cruelty to Animals (*one* only. Not more than half an hour is to be given to answering this question).

2.—Give an example of a "Prescription" set out in due form, giving the ordinary contractions. For what disease would you prescribe it?

3.—Write the same Prescription in full in Latin and English.

Arithmetic.

1.—What sum must be divided among 27 men so that each may receive £14 6s. 8½d.?

2.—A plate of gold cost £161 17s. 6d. at £4 7s. 6d. per oz.; what was its weight?

3.—If a servant receive £3 10s. for 20 weeks' service, how many weeks ought he to remain in his place for 12 guineas?

4.—Find the interest on £1,245 for 15 years at 4¾ per cent.

The students attending the Royal Veterinary College in the early 'eighties, were either men drawn from the land or the sons of veterinary surgeons or registered practitioners; the dress they wore was very characteristic of the students and most veterinary students were known by their appearance.

Text Books at the disposal of Students.—Steele and Chauveau's Anatomy; Kirke's Physiology; Cobbold's Parisitology; Green's Morbid Anatomy; William's Surgery and Medicine; Stockhart's Chemistry, and Bentley's Botany.

In Later Days.

By the advent of the mechanically-propelled vehicle much of horse practice has gone, except in hunting and racing districts, but the monetary value of the smaller animals reaching a high figure, we are now more frequently called in to give advice on dogs, cats, poultry, rabbits, etc.

The public appointments in connection with the various Acts of Parliament that have been enacted during the last few years, have enabled most practitioners to add to their income by acting as Veterinary Advisers to the County Councils, Town Councils and other such bodies.

The Great War enabled the country to see the indispensable value of the veterinary surgeon and thus to raise the prestige of the profession in the eyes of the public, and in a large measure to secure the respect of the authorities that be.

The formation of the Ministry of Agriculture and the Ministry of Health has led many veterinary surgeons to assist as Local Veterinary Inspectors in the combating of contagious disease.

To be successful in the profession to-day one must be a specialist more or less, and make a speciality of some branch of the profession. Some men are good surgeons, and bad pathologists; others succeed as clinicians. Many to-day specialise as canine surgeons to the exclusion of all other animals, but for the graduate who is not afraid of work and physically strong there is still room in rural practices for a good all-round cattle doctor. Whether one specialises or not, every man who proves successful in the veterinary profession must have a love for animals and must make himself proficient in the handling of all animals, for, in my opinion, all animals know when a man is afraid to handle and whilst a successful surgeon must have a thorough knowledge of his anatomy, yet in

Epidural Anæsthesia.*

By
E. R. Frank, Manhattan, Kansas.
Division of Veterinary Medicine, Kansas State Agricultural College.

The object of epidural anæsthesia is to permit manipulations and surgical operations upon the reproductive organs, abdominal cavity and posterior limbs without the use of a general anæsthetic.

It is particularly useful to the practitioner who does not have a trained assistant to administer anæsthetics.

The practitioner who makes the necessary effort to become adept with this type of anæsthesia will find that it is a satisfactory method of producing anæsthesia upon the posterior portions of the body of the various domestic animals, possessing many advantages over the older forms of anæsthesia.

The purpose of this article is to show that regional anæsthesia is of service in dealing with major operations in which anæsthesia is of the utmost importance.

In injecting anæsthetic solutions into the epidural space the injection should be made slowly. There is very little danger if due caution is taken to inject *slowly*. In fact, its comparative freedom from danger constitutes one of the major advantages of the epidural method of producing anæsthesia in all animals.

Procaine, dissolved in a physiological salt solution to make a one per cent. or two per cent. strength, has been the preferred anæsthetic due to its low toxicity and its reliability. But other anæsthetics, as locadyne and dulcine, also give good results.

A glass syringe is preferred to any other, as there is little friction in its use, and since it transmits more delicately the amount of pressure which is being used to inject the solution. This is very important, for if the needle is properly placed, no pressure should be necessary to make the injection; the syringe emptying as easily as if discharged into the air.

The needles which are used should be compatible in size with the animals they are used upon; the smaller the needles the less the trauma to the tissues. For horses a 16- or 18-gauge needle, two inches long, is preferred. The depth to insert the needle will vary from one to one and one-half inches. In hogs an 18-gauge needle, three inches long, is usually ample for most injections. The distance it will have to be inserted will vary from one and one-half to three inches. For dogs and cats a 20-gauge needle, two inches long, is sufficient and the depth will vary from one-half to two inches.

Injection in the Horse.

The site of injection is located in the horse by running the finger down the croup until we come to the first evident depression, which is between the first and second coccygeal vertebræ. The needle is inserted in the centre of the depression and given a slant of about 45 degrees with the point forward. The needle should be started and kept in the median plane of the body.

For operations upon the tail, 10 to 15 c.c. of a two per cent. solution is sufficient. In obstetrical work, as dystokias, prolapse of the uterus, or other manipulations, 20 to 40 c.c. of a one per cent. solution will be required. To obtain anæsthesia in more painful operations, as hernia, and cryptorchidism, 20 to 40 c.c. of a two per cent. solution is necessary. As complete relaxation of the muscles is desirable in these operations, it constitutes an ideal form of anæsthesia.

The Injection in Cattle.

Professor Franz Benesch, of Austria, introduced epidural anæsthesia in cattle into this country. The site of injection is located by elevating the tail and feeling the very evident depression between the first and second coccygeal vertebræ or between the last sacral and first coccygeal vertebræ. A sixteen gauge, two-inch needle is inserted, into the centre of the depression, until the point strikes the bony floor of the canal. When the needle is properly placed practically no force is required in making the injection. This method of anæsthesia is indicated in replacing prolapse of the rectum, uterus or vagina, removal of some retained placenta and other operations or manipulation of the genitalia. For these operations 20 to 40 cubic centimetres of 0·75 per cent. or 1 per cent. procaine solution gives the desired degree of anæsthesia. Epidural anæsthesia is probably more universally used than any other and is especially valuable in controlling straining while the operator adjusts some malpresentation of the fœtus in cases of difficult parturition. The retractor penis muscle of the bull readily relaxes under the influence of an epidural injection, allowing the penis to be exposed for examination or operation without the difficulty usually encountered.

For extremely painful operations, such as amputation of the udder, I find that 40 cubic centimetres of a three per cent. solution gives the best degree of anæsthesia.

Use in the Hog.

As most of the operations upon hogs are confined to the posterior portions of the body, epidural anæsthesia is a very desirable form of anæsthesia to use in this animal.

The site of injection is located by palpating for the anterior borders of the wings of the ilium, which can be easily felt except in very fat animals. Draw an imaginary line transversely across from the anterior borders and measure back two and one-half inches in the median line. Then, with needle on the median line, insert it in a downward direction until it passes through the interspace between the last lumbar vertebræ and the sacrum into the spinal canal.

* Reproduced from *Veterinary Medicine*, Chicago, March, 1931.

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the handling of one's patient before he is secured for the operation much time and labour is saved if one knows one's animal and the way to handle him.

These notes have been extracted from old books, notes taken during a course of study at the College from 1877-1880 and from my own personal work.

I could supply many notes from experience previous to 1880, even as far back as "Cattle Plague in 1864," but as this retrospect relates to the period 1881-1931, I have refrained from giving that experience.

Inject 1 c.c. of a two per cent. anæsthetic solution for each ten pounds of body weight. However, this dosage may be varied a little after one becomes experienced in its use. Very fat animals should receive slightly less because they seem to be a little more susceptible to procaine poisoning.

In the college clinic I find it the most desirable form of anæsthesia for the relief of scirrhous cords, scrotal and inguinal hernias, cæsarean section, removal of tumours, and monorchidism in pigs.

The Injection in Dogs.

The point at which to insert the needle in the dog may be located by palpating for the depression just anterior to the first sacral vertebra, or the depression may be located on a line drawn transversely across from the posterior borders of the wings of the ilium. The needle should be inserted exactly in the centre of the depression and tilted slightly backward, but at an angle somewhat less than 45 degrees from perpendicular. The depth that the needle will have to be inserted will vary from one-half inch in small dogs to two inches in the larger dogs. It is very easy to miss the canal in this animal if the needle is not inserted exactly in the centre of the depression.

The amount of the two per cent. anæsthetic solution to use will be approximately 1 c.c. for each five pounds of body weight. This will provide anæsthesia for spaying, cæsarean section, amputation of hind leg, reduction of fractures in the hind legs, and pelvis, operations on the hind feet, and any other operation on the posterior portion of the body. For caudectomy, ½ c.c. of the anæsthetic solution is sufficient.

Use in the Cat.

The location of the site of injection in the cat is the same as in the dog. Three c.c. of a two per cent. solution is sufficient for the average-sized cat. Smaller amounts may be used in younger cats. The indications for its use in this animal are similar to the indications for its use in the dog.

Exceptionally, an animal will possess an idiosyncrasy for procaine which will result in toxic symptoms, such as twitching of the head, howling, stiffening out legs, difficulty in breathing, running movement of the legs, and even death may occur, but these toxic symptoms are quickly overcome and the animal even saved from death by the intravenous administration of a solution of soluble barbital. A 40-pound dog should receive 20 grains of barbital in 25 cubic centimetres of water.

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Leaflet No. 75 (U.S. Department of Agriculture, May, 1931) discusses Warts on Cattle. It may possibly be new to some that warts are definitely considered as being infectious, the causative agent being a filtrable virus. Skin inoculations with wart material have demonstrated that the affection can be reproduced. Infection is thought to take place through injuries to the skin when the injured part comes in contact with wart virus. This is doubtless done by animals rubbing against posts and buildings.—*N. Am. Vet.*

British Medical Association "Popular Lecture."

Principal Hobday on "Some Diseases of Animals Communicable to Man."

In connection with the ninety-ninth annual meeting of the British Medical Association, which was held at Eastbourne from July 17th to 24th, a popular lecture for members of the general public on "Some Diseases of Animals Communicable to Man" was delivered by Professor F. T. G. Hobday, Principal and Dean of the Royal Veterinary College, London.

In the course of his lecture, Principal Hobday said:—

"It is customary at the annual meetings of the British Medical Association to devote one evening to some subject which is of popular interest from a medical aspect, but I am much honoured in being asked to deliver the lecture on this occasion. The title which has been chosen is that of "Some Diseases of Animals Communicable to Man," and I have been granted permission to illuminate my text with the aid of the cinema and the lantern; each of which are methods now used as universally for medical and veterinary lectures as for providing pleasant evenings for the general public.

"There are at least two very obvious reasons why it is necessary for those who own or associate with animals, to consider the necessity for keeping them as far as possible in health. The first thought on the part of the owner is probably for the sake of the animal itself, involving economic, as well as sentimental, reasons; but the second (and the most important from our point of view this evening) is from the Public Health aspect, on account of the transmissibility of certain animal diseases to man; and it is from this standpoint that I propose to treat the subject to-night. The latter is of particular importance to those who have to do with children, because, as is well known, the system of the child is more sensitive than that of the "grown up," and for this reason one feels that one has an appreciative audience in speaking to those who are heads of households, as well as those who are called in to administer medical aid when this is required. Besides which, as everyone will admit, "prevention is better than cure," and, as many of these diseases can be prevented, "to be forewarned is to be fore-armed."

"The subject is of equal importance to the townsman as to the agriculturist, for there are very few families who have not an animal pet of some kind or other, and if it is not an animal it is a bird; and birds are not only placed with animals amongst the patients of the veterinary surgeon but some of their diseases are also communicable to man. This was brought very forcibly to the notice of the general public quite recently when some human patients died of psittacosis; and, not only was a large number of parrots destroyed in England, but several cargoes were forbidden to enter this country.

"Frequently the practitioners of both human and veterinary medicine find the necessity for collaboration and interchange of opinions in regard to some subject of Comparative Medicine which equally involves diseases of mutual importance in respect to their effect on man and animals. The veterinary practitioner is repeatedly asked the question: 'What is the extent of risk run by children when the dog or cat in the house becomes ill?' Very often there is a danger of contagion, which makes it wise to adopt some method of isolating the sick animal in a part of the house, or perhaps outside, where children cannot come into contact with it. This fear of transmission is by no means groundless, and I propose to bring to your notice a few of the diseases which can be passed from the so-called lower animals to the so-called (and perhaps I might say self-styled) higher animals, of the human kind.

"I propose to deal in turn with each of the most familiar of our domesticated animals, commencing with the horse and carrying on with the cow, the dog, the cat, and such nursery pets as rabbits, white mice, rats, etc.

" Since the advent of the motor, the number of horses in Great Britain has diminished very appreciably, and, now that the roads are made specially for the motor, it is certain that the horse will become less and less a beast of burden; but in certain conditions and situations the horse (especially the heavy horse and the hunter) still holds his own; not only as an adjunct to health and pleasure but also on economic grounds; for the horse is cheaper as a working factor than the motor where short distances are concerned; and in a trade, such as one which involves the delivery of the butcher's or the baker's goods within a short radius, where stopping and starting are necessary factors, the horse is cheaper than the motor.

" From the horse we may contract, and therefore have to beware of, sundry diseases of which the chief are glanders, mange and ringworm. The first-mentioned, glanders, has now disappeared from Great Britain. It is a disease which has been stamped out entirely by the measures which have been taken under the Contagious Diseases of Animals Act, the provisions of which were framed, and are carried out, by the Veterinary Department of the Ministry of Agriculture; although it is only some twenty years ago that in London alone some 1,800 horses were destroyed every year for this disease, and at least eight or nine men used to die annually of glanders contracted solely from diseased animals. . . .

" Every effort is now taken by the Ministry of Agriculture Veterinary Authorities, in the shape of quarantine regulations and Mallein test precautions, on all horses brought into this country, in order to prevent this disease (glanders) from ever gaining entrance into Great Britain again.

" The handling of a horse with a moth-eaten coat, or one which is continually showing signs of itchiness, should never be allowed, as there are two diseases of the skin—mange and ringworm—which are transmissible to man. In the old days it was not at all an uncommon thing to see a cabhorse suffering from one or other of these complaints, and I well recollect on one occasion how one of my students, although he had been warned of the danger, as soon as my back was turned, out of bravado, rubbed his finger over a ringworm on a cabhorse's skin and stroked it down his face. Within a few days the result was a crop of ringworms which made shaving a difficulty and prevented his appearance at his classes for more than a fortnight.

" Ringworm now, however, in the horse is of comparative rarity and the occurrence of mange, too, in horses is becoming less and less frequent. The latter disease is now compulsorily notifiable under the Contagious Diseases of Animals Act, and to be caught working a mangy horse is an offence against the law which is punishable in the shape of fines and other penalties upon the head, not only of the owner, but of the person who is in charge of the animal at the time.

" The calf is very liable to ringworm infection and it is not at all an uncommon thing for those who have these animals under their care to become the subjects of this disease. The cat, the rabbit and even the hedgehog, are also subjects which can pass on this infection to the skin of man.

Tuberculosis.

" Of much more serious moment as a transmitter of disease to children and invalids is the tuberculous cow. That cattle suffer severely from tuberculosis, or consumption, is well known to all who have to do with the animals of the farm, and a great effort is being made at the present time to eradicate this terrible disease from cattle in order to assist in getting rid of it from man. It is in the dairy cow that the danger principally lies, for one never quite knows when a consumptive cow will begin to give tuberculous milk; and as milk is, of course, the staple food of infants and invalids one can quite appreciate that stern measures should be taken to deal with such a danger. It seems a scandalous thing that milk, containing sufficient poison in the form of tubercle organisms to affect thousands of people, is able to be sold for drinking purposes all over the country; and that in some of our largest cities samples of milk are continually being taken which contain these deadly germs. It has been estimated that over 3,000 children die on an average each year from tuberculosis caught from the milk of the cow, and it is now universally recognised that tuberculosis of the bones and joints, as well as the swellings which are caused in the glands of the neck from infection with this trouble, are practically always of bovine origin.

" Tuberculosis is pre-eminently a disease illustrative of the necessity for collaboration between the medical man, the veterinarian and the general public in the cause of public health. Every Medical Officer of Health knows full well the danger of tuberculous milk and it is necessary that the general public should be acquainted with this too; and also that they shall know something of the great efforts which are being made all over the country by the medical and veterinary health authorities, seconded by the large milk companies and dairy owners, to supply milk which infants and invalids can drink with safety.

" It was stated by the late Dr. Howarth, the late Medical Officer of Health for London, that out of fifty consecutive samples of milk which had been purchased in the City not less than one in four proved to be tuberculous; and Dr. Biggs, the Statistical Assessor in Ireland, estimated that six per cent. of the deaths from tuberculosis were due to drinking tuberculous milk. At one of the National Milk Conferences, Dr. Stanley Griffiths, in a paper on " Bovine Tuberculosis and its Relation to Man," gave some statistics which went to prove more than ever the necessity for the medical and veterinary branches of medicine to pull together. At an investigation of 1,200 cases of tuberculosis he found that 87·5 per cent. of infections with tuberculosis of the neck glands in children up to five years of age were bovine, and similarly 61·3 per cent. of those between five and ten years. Of 47 cases of bone and joint tuberculosis 28·7 per cent. of those under five years were of bovine origin, and 23·1 per cent. of those between five and ten years; and of 113 *post-mortem* examinations conducted by the Local Government Board it was found that in 21·3 per cent. of those under five years at death the infective organism was bovine, and similarly in 13·4 per cent. of deaths between five and 12 years. The same medical scientist estimates that tuberculosis contracted through the consumption of cow's milk causes approximately 3,000 deaths every year. As all these infections are caused by the drinking of milk from cows suffering from tuberculosis of the milk glands it is hoped that when the new regulations, which compel the owner of a dairy cow having anything wrong with the udder to call in a veterinary surgeon, are in operation, they will have the effect of eliminating in a great measure the chances of infection from the cow to man. The diagnosis of tuberculosis in the cow can only be made accurately by the trained veterinarian, and his value in relation to Public Health is again here demonstrated.

" One wonders why, in an enlightened country such as Great Britain and, too, in the Year of Grace 1931, such a thing can be possible. Surely milk, the staple food of the infant and the invalid, should receive sufficient care and attention from both Government and general public alike to ensure its purity, or, if not its actual purity, its freedom from the germs of such a terrible devastating and painful ailment as tuberculosis. Why then, until lately, has it been possible for an unscrupulous, or unsuspecting, dairy owner to sell milk teeming with tubercle bacilli? The answer lies largely in the apathy of the general public who do not appear to wish, nor do they care, to know whether the milk is from a tuberculosis free herd—nor will they as a body pay a few pence more per quart in order to ensure that their milk is obtained from what is now termed in England a " tubercle-free," or in America, an " accredited " herd. America has forged ahead of us in this respect, and there are now many thousands of cattle guaranteed free from tuberculosis in that country, and, if every housewife would insist upon such a guarantee from the dairyman in respect to the daily milk supply, tuberculous milk would soon be a

thing of the past. Not only would the health of thousands of people be safeguarded, but a big proportion of them, especially the children, would be saved, as the veterinary profession has in its hands a reliable test in the skilled use of the agent known as tuberculin.

"You may ask, why do we not eradicate tuberculosis from cattle by destroying all the diseased ones? The answer is that it is estimated that there are a million tuberculous cattle in England—so that to destroy all these at once would mean such a shortage of both meat and milk as to make this course impracticable. The work of weeding out the tuberculous cow is proceeding, and there are now numerous dairy herds which are certified free from tuberculosis; but it would progress much more rapidly if the hospitals, the general medical practitioner, and the purchaser of milk, would unite together to demand that the milk they purchase is guaranteed "tubercle-free." The general medical practitioner especially can do more than he is doing to further this object.

"There are several other diseases, notably anthrax, foot-and-mouth disease and cow-pox, which can be transmitted from cattle to man, but I think that I have told you enough of this section to-night to set you thinking about whether or not you will insist upon obtaining a guarantee that the milk supplied to your respective households is of Grade A (T.T.) quality and thus free from tuberculosis. It is not enough for it to be Grade A—that is not a guarantee of freedom from tubercle bacilli—it must be tuberculin tested. . .

"Anthrax (Woolsorters Disease) is always serious, as if not taken in time it invariably results in death. In cattle death is very sudden, and the Government has imposed laws and regulations which provide that the body must be cremated as near as possible to the place where the animal died. It is forbidden, too, in any way to cut the carcass, as on many occasions those making or assisting at *post-mortems* have become infected and have died in consequence. In Bradford, and other districts where wool from foreign countries is handled, disinfection is compulsorily adopted with satisfactory results, and if such practice could also be adopted in the case of hides, bone-manure and other animal products, before they are imported into this country, deaths from anthrax in man and animal would diminish considerably. Once eradicate anthrax from the animal and its eradication from man would automatically follow. It is purely and primarily a disease for the veterinary surgeon to deal with.

Foot-and-Mouth Disease.

"Foot-and-mouth Disease, so much to the fore at the present time, has in the Daily Press provoked a good deal of misleading and uncalled for criticism against the veterinary advisors to the Ministry of Agriculture; but there is no question but that they have adhered to the correct policy, which is that of "stamping out"; and, although the cost of dealing in this way with outbreaks which occurred from time to time has amounted to a very considerable sum, it is a mere bagatelle when compared with what it might have been. The monthly statistical tables of outbreaks in other countries, as published by the Ministry of Agriculture, demonstrate more than ever this year the advantageous position in which Great Britain is now placed in regard to this troublesome disease:—

Month	Great Britain	France	Germany	Holland	Belgium
January	—	849	1,235	13	16
February	—	898	1,356	9	20
March	—	477	1,814	5	19
April	—	365	2,024	136	45
May	—	307	2,541	1,569	109
June	—	283	3,097	6,117	117
July	—	292	3,555	6,062	147
August	—	319	3,627	4,262	167
September ...	7	651	4,666	4,973	151
October	—	852	5,602	3,847	73
November ...	1	722	5,012	2,234	86
December ...	—	530	3,827	1,074	93

"The cost to Holland, France, Belgium, Denmark and Germany is not only very much greater each year, but they never get any further forward, having the disease always endemic. The public has only to think what it would mean to England if the disease were allowed to spread, with the fact before it that milk from cattle affected with foot and-mouth disease must not on any account be consumed by children or invalids, nor be given to goats, pigs or any other cloven-footed animal. . . .

Rabies is by far the most dreaded of all the diseases communicable to man from the dog or the cat; and both the medical profession and the general public have much for which to be grateful to the veterinary profession, in that it is owing to their work that this disease has not only been eradicated, but is now kept from readmission to the country. . . . One frequently hears people say and reads newspaper correspondence about the mental cruelty of our quarantine regulations, but is it not less cruel to have "common-sense" and take these absolutely necessary precautions?

"Mange of the horse is now dealt with in all parts of Great Britain under a Mange Order issued from the Veterinary Department of the Ministry of Agriculture, and its spread has now been effectually checked, although not yet completely eradicated, but the number of cases of mange in horses is now extraordinarily small. It is, however, to the domesticated pets, especially the dog and the cat, that the attention of the public should be drawn, for it is quite an easy matter for a pet dog to transmit the parasite of mange from itself to its owner. An itchy dog should therefore always be regarded with suspicion, and the pernicious habit of allowing a dog to sleep in bed with a human being should be very emphatically discouraged. . .

"There are numbers of diseases in which, although they are not recognised as definitely contagious, it is of value to the Public Health Service that in the fight for their eradication the human physician and the veterinarian should collaborate, for the patients of each are equally attacked. Cancer may be taken as a type, for this dreaded disease is recognised in horses, dogs, cats, birds, and even in the fish; and many of the theories which research workers form, if their observations are concentrated on man alone, can at once be seen to be erroneous upon comparing notes with veterinary pathologists, whose lives bring them in contact with the 'comparative' aspect. Foreign countries have for a long time recognised this, and their respective Governments have granted liberal funds for research into the problems of animal diseases and their relation to Public Health, finding it a paying proposition even if considered only from the economic standpoint. Great Britain, as usual, has been behindhand in this respect, although during the past few years, by the establishment of an Animal Research Institute connected with the Royal Veterinary College, London, and others at Cambridge and Edinburgh; also by the establishment of University Veterinary degrees and the Post-Graduate diploma of Veterinary State Medicine, there has been created a good prospect that well before another decade has passed a Government Organisation of Veterinary Officers of Health will have as important a place in Public Health as is accorded to the graduates of the human branch of State Medicine." . . .

An appeal by the Department of Agriculture for Scotland is made to farmers, meat dealers, salesmen and auctioneers to support Scottish National Mark Beef. It is claimed that the National Mark has steadied the price of Scottish beef at a higher level and taught the public what Scottish beef is.

The appeal of sheep dog trials is becoming more widespread than ever, and there was the finest attendance for several years at the Scottish National Trials at Aberlady last week.

Clinical and Case Reports.

Lameness from Disuse Atrophy: Treatment by Forced Exercise.

By
D. E. Wilkinson, M.R.C.V.S., Chigwell.

In March, 1930, I was asked to go to the West of England to examine a lady's hunter which had been lame for 18 months, thus losing two whole seasons' hunting.

The history given was that the animal, a brown gelding, nine years old, up to 13 stone, had broken loose from the groom whilst being led at exercise during a violent thunderstorm and had galloped about on the downs for an hour before being caught. When eventually secured he was so lame that he was only led home with great difficulty. Various methods of treatment had been adopted, followed by prolonged rest, but the lameness persisted.

On examination I found the animal lame on the near fore limb. At rest the weight was well borne and there was no " pointing " nor flexing of tendons or subcarpal joints. During progression the stride was somewhat shortened and there was slight abduction of the limb. Extension below the carpus was normal but there was a slight tendency to trip when hurried, this defect hardly amounting to a stumble. There was no exostosis about or below the carpus, no swelling and no pain on manipulation, nor was there any contraction of the hoof in spite of the prolonged lameness.

When trotted in hand it could be seen that the stride *above* the knee was somewhat shorter than that of the opposite limb and on being trotted uphill the animal caught his toe in advancing.

This led to a careful examination of the muscles of the arm and shoulder which were found, by comparison with the opposite limb, to be slightly wasted, the atrophy not being sufficiently advanced to be outstandingly noticeable. No pain whatever was evinced on manipulation either from digital pressure or from forcible extension and flexion of the shoulder and elbow joints, but the atrophy, although slight, involved practically the whole of the musculature of the limb.

The conclusion arrived at was that the primary lameness and subsequent atrophy arose from some injury involving the nerves of the brachial plexus, probably a stretching of the whole bundle at its exit through the scalenus muscle, caused by violent abduction of the limb at the time of the original accident. The atrophy appeared far too extensive for a purely muscular injury, involving as it did the supra- and infraspinati, the triceps brachii, latissimus dorsi, the extensor muscles of the arm, and probably the adductors of the upper arm.

The complete absence of pain on manipulation led me to conclude that the time when any further benefit might be obtained from prolonged rest had gone by and that I had to contend with a disuse atrophy possibly complicated by some adhesions of injured muscular fibres and that the appropriate treatment was forced exercise.

As the owner wished the horse to remain at grass, arrangements were made for the groom to catch the animal three times each day and lunge him for twenty minutes, at the trot, in right hand circles, thus forcing him to extend the affected limb which would be on the outer arc of the circle.

The owner was warned that this exercise would probably temporarily increase the lameness by breaking down adhesions and that, if this occurred, a short rest must be given until the increased lameness subsided. This increase of lameness actually occurred after the third day of forced exercise but subsided again in 48 hours.

Arrangements were made for the owner to report progress each month and, with the exception of the early temporary increase of lameness just mentioned, the reports were always of progressive improvement. At the commencement of last hunting season the horse trotted sound and I advised the owner she might try hunting him from near-by meets, warning her that he might go lame after hunting, but suggesting that if this lameness passed off in 24 hours it could be ignored.

In May last the owner rang up on the telephone to say she had hunted the horse one day a week throughout the season and that he had never gone so well or so boldy before and he had developed into a big jumper, especially over timber, but that he always went lame for one day after hunting. His improvement in the hunting field may be attributed to his exceptional fitness, as he had been vigorously exercised all spring and summer instead of having merely the usual hunter's preparation of about six weeks in the autumn.

An Unusual Accident to a Greyhound.

By
Hamilton Kirk, M.R.C.V.S.

A greyhound, whilst participating in a race on one of the London tracks, ran a little too close to the fence and struck his near stifle joint. He was unable to put his leg to the ground when examined a minute later, and a deep wound was found just above the patella.

There was every indication (except crepitus) that a bone was fractured, a view which was strengthened by one's ability to feel, in the integument above the patella, a small detached hard body. I took this to be one of the condyles of the femur. The dog was removed to my surgery, where I at once X-rayed the leg. What had been felt could also be seen in the skiagraph and it was decided to chloroform the dog the following morning and extract the piece of bone.

The lesion was exceedingly painful, and anæsthesia was essential. I then found that what had been regarded as a piece of bone was actually the semi-ossified terminal portion of a tendon from the biceps femoris. This had been torn completely away from its attachment to the patella, leaving on the latter a roughened area.

Nothing could be done for this except irrigation of the wound, and nor were any sutures inserted. It was never considered that union could take place, although healing would eventually be complete. On account of the probable loss of use of a portion of the biceps muscle, therefore, the prognosis was about 3 to 1 against the dog ever racing again. He was ultimately destroyed.

Abstracts.

[**Cannibalism in Poultry.** Reinhardt. *D.T.W.*, No. 24. p. 369.]

Malke described a case of cannibalism in hens caused by a lack of proteins in the food, which stopped immediately this defect was remedied. It took the form of cloaca pecking and almost the whole intestine of the victim was pulled through the anus and devoured. In a case mentioned by Krause, however, the food left nothing to be desired, and the cannibalism was ascribed to the predilection of hens for blood. Ward and Gallacher, in their book on " Diseases of Domesticated Birds " record inflammation of the cloaca and anus in fowls. The strange, swollen and protruding mass attracts other birds which attack the part and sometimes cause death. They also refer to " toe-picking " which is common where chicks are artificially reared in confined spaces. It is the innate instinct of chicks which prompts them to attack their injured or sick companions, which are often mutilated or killed. In the same way the habit shows itself in pecking the anus. As soon as the taste for blood is aroused, the chicks attack each other and cause considerable destruction.

These authorities recommend isolation of all injured chicks until they are completely healed, and as a preventative, to supply dry food, such as dried meat, scattered on the floor.

In a case of toe-picking among day-old chicks observed by Grashuis, the trouble was caused by a mistake in the composition of the food. The picking diminished in 2-3 days after the administration of cod-liver oil, chalk and salt, and ceased entirely after five days. Kennard has carefully observed anus picking on two occasions. After tasting fresh flesh and blood the birds attacked their healthy companions and tore pieces of skin from the anal region. As a preventative he recommends removal of the point of the beak and anointing the wounds and feathers of the injured with wood tar.

Finally, Bunyea describes cannibalism in fowls associated with *B. pullorum* infection. The infection showed itself at the height of egg production as a cloacitis, and some birds showed blood at the anus without apparent cause. This attracted other fowls which actually eviscerated the unfortunate victims. In summarising his views on *B. pullorum* infection, Bunyea states in its enzootic form it can set up inflammation of the oviduct in good layers. As a result affected fowls may lay bad-smelling, blood-containing eggs, eggs streaked with blood and with weak shells, and may cause cloacitis with diarrhœa and a predisposition to cannibalism.

W. L. S.

[**Treatment of a Lacerated Wound near the Anal Gland of a Mink.** Lane. *D.T.W.*, No. 24, p. 375.]

A young female mink, about four years old, during the mating season sustained a lacerated wound 3 cms. long, and about one finger breadth from the vulva. It is well-known that male and female minks are very excitable at this period, and about dusk rush about madly seeking their partners. The females dart about in the undergrowth, while the males emit sharp piping and snorting sounds, which to the inexperienced person are rather terrifying. The wound had probably been caused by contact with a sharp projection. The animal refused all food, scorned even warm blood, and the breeder sent for professional help. Handling was difficult owing to the restless and biting nature of the patient, but the wound, which was necrotic, was washed with a suitable disinfectant. Caster sugar was then dusted on to the wound on the assumption that by licking, etc., the animal would itself complete the process of healing, and this actually occurred.

W. L. S.

[**Remarks on Avian Tuberculosis Infection in Mammals.** Van Es, L. (1931). *J. Amer. Vet. Med. Ass.* 78. 371-378. Ex. *Vet. Bull.*]

The author gives an account of the results obtained from the final experiments of an investigation which was commenced in 1923 to study the importance of avian tuberculous infection in cattle and human beings.

Out of 105 cases in domesticated birds, 104 were of the avian type and one was of a mixed type.

In 58 cases of generalised tuberculosis in cattle, the strains obtained were all of the bovine type. Negative results were obtained in the examination of 39 hæmorrhagic lymph-nodes and of five pregnant uteri from positively reacting cattle free from tuberculous lesions. Acid-fast bacilli were present in 36 out of 40 bovine tuberculous skin lesions, but typing experiments could not be carried out because the bacilli present in the lesions were apparently dead, as pigs remained healthy after feeding on large quantities of the diseased tissues. Of the bacilli present in material from 115 isolated lesions in cattle, 100 were of the mammalian, 11 of the avian and 4 of mixed types; 6 out of the 11 cattle affected with the avian type were reactors to the tuberculin test.

227 lesions were typed from human cases, including 8 generalised cases, 44 bone and joint cases, 99 kidney cases, 25 cases of tuberculous lymphadenitis, 13 cases in which bacilli were present in cerebro-spinal fluid, and 11 tuberculous abscesses. 217 strains of the human, 9 strains of the bovine, and one undetermined type were obtained; this last strain was not classified but it was definitely not of the avian type. The author considers that the eradication campaign in dairy herds may be in part responsible for the low incidence of bovine infection in these extra-pulmonary cases and supports his view by pointing out that, although 40 per cent. of the material examined was from children of less than 15 years of age, only two bovine infections occurred in this group. The kidney in man is apparently a predilection seat for the bovine bacillus, as six out of the nine bovine types were obtained from kidney lesions.

It is concluded that the avian bacillus is of considerable importance to cattle and may influence the tuberculin test; this point needs further inquiry. Avian tuberculosis does not seem to be of great importance to human beings in the United States.

[**Report of the Special Committee on Abortion.** (1930.) *J. Amer. Vet. Med. Ass.* 77. 491-493. Ex. *Vet. Bull.*]

This is one of six or seven committees appointed annually by the American Veterinary Medical Association to consider and report on major problems of veterinary science. As each committee is comprised of men who are recognised authorities on their own respective subjects, these reports are of very considerable value.

It is the opinion of this Committee that, of the various factors responsible for abortion and other breeding troubles, Bang's disease is by far the most important. It should be recognised, however, that the other factors may occasionally cause considerable losses in herds which have been freed from *Br. abortus* infection.

Nutritional mineral deficiency, other than that of iodine, has not been proved to give rise to abortion under average farm conditions.

In the light of present knowledge, the best method of controlling the disease is the elimination of infection by means of the agglutination test and the establishment of clean herds. The Committee recommends that a serum titre of 1 : 100 should be accepted as indicating infection and that a titre of 1 : 50 should be regarded as suspicious. This recommendation is based on the failure to isolate *Br. abortus* from animals whose serum reacts in titres lower than 1 : 100.

The Committee points out that the significance of suspicious reactors cannot be determined by a single test and that such animals should be tested monthly until changes in the agglutinin content of the serum permit of a definite diagnosis.

Animals giving suspicious reactions over long periods should be removed from healthy herds. Abortion-free herds should be tested at intervals of six months and infected herds at intervals of three months or even less.

In the opinion of the committee the veterinary practitioner has an important duty to perform in the control and eradication of Bang's disease. The stockowner depends on him for an interpretation of the results of laboratory tests and for advice as to the disposal of animals that give positive or suspicious reactions.

While it is recognised that, in a considerable number of herds, it is impracticable to pursue an eradication policy based on the isolation of infected animals, there are few herds in which it is impossible to improve existing conditions and to reduce infection by the use of calving stalls and attention to hygiene.

The Committee believes that both bovine and porcine strains of *Br. abortus* are important in relation to public health, but to an extent which has not as yet been definitely ascertained. There would no longer appear to be any doubt that the milk of cows infected with *Br. abortus* may sometimes cause undulant fever in man. Human infection can also occur through direct contact with infected cattle or swine.

[**Boric Acid for the Preservation of Milk Naturally Infected with *Br. abortus*.** Traum, J., and Henry, B. S. (1930). *J. Infect. Dis* 47. 380-383. Ex. *Vet. Bull.*]

There are difficulties in the preservation of milk samples for despatch to laboratories for biological tests for the presence of *Br. abortus*. Unless the samples are refrigerated or an antiseptic is used, the growth of contaminants leads to the death of laboratory animals inoculated with the milk.

Gilbert, Coleman and Groesbeck have shown that 30 per cent. glycerol will not destroy *Br. abortus* in milk.

Traum and Hart found that tubercle bacilli survive in milk preserved with one per cent. boric acid and that such milk can be sent a considerable distance, even during warm weather, without becoming contaminated to such an extent as to interfere with laboratory examination or the results of inoculation into guinea-pigs.

It was ascertained in a preliminary test that milk from cows which were known to be excreting *Br. abortus* was infective to guinea-pigs when preserved with one per cent. of boric acid and kept at room temperature for 40, 66 and 94 hours.

Experiments were then carried out with the mixed milk from 20 cows with high agglutination titres. The milk was divided into seven samples and was placed in amber-coloured, rubber-stoppered bottles. Three of the samples were preserved with one per cent. of boric acid; one was placed in the ice-box, one was kept at room temperature and the third was incubated at 37° C. Three untreated samples were kept under the same temperature conditions. The seventh sample was preserved with 30 per cent. of glycerol and kept at room temperature.

Samples were taken from each bottle after varying intervals and were centrifuged at 2,500 revolutions per minute. The cream and sediment were mixed and 2 to 2·5 c.c. amounts were injected into guinea-pigs.

Only one guinea-pig survived the inoculation of unpreserved milk kept at room and incubator temperatures and, at autopsy, the animal was free from *Br. abortus* lesions, which indicated that the organisms had been destroyed by the acidity of the milk.

Br. abortus survived for at least 253 hours in unpreserved milk kept in the ice-box.

It survived for the same period in milk preserved with one per cent. boric acid and kept at room temperature and for 118 hours when the milk was kept at 37° C.

[**The Transmission of Periodic Ophthalmia of Horses by means of Filterable Agent.** Woods, A. C., and Chesney, A. M. (*Jour. Expt. Med.* 52 (1930), No. 4, pp. 637-647, pls. 5. Ex. *Expt. Sta. Rec.*]

A filtrable agent was obtained from the humors and tissues of the eyes of horses suffering from active periodic ophthalmia, the intravitreous injection of which produced in normal horses the same clinical and pathogenical picture observed in the natural disease. "This filtrate injected into rabbits produced a different clinical picture, but the essential pathological lesions closely resembled those found in horses. After passage of the filtrable agent through six generations of rabbits, it again produced the clinical and pathological picture of the natural disease when injected into the eyes of normal horses. It appears, in this epidemic at least, that this filtrable agent was the specific etiological factor of the periodic ophthalmia."

Municipal Report.

Annual Report for the County of Lanark and the Burghs of Biggar and Lanark for the Year 1930.

We are in receipt of the Fifth Annual Report by Mr. Hugh Begg on the work done by the Veterinary Department of the County of Lanark under the Milk and Dairies (Scotland) Act, 1914. Although this is only the fifth annual report under the above Act, Lanarkshire was the pioneer county to form a veterinary department and Mr. Begg's appointment dates back to 1910.

We are informed that no case of foot-and-mouth disease occurred during the year nor was any suspected case reported.

Fifteen outbreaks of anthrax occurred, involving the deaths of 16 animals—the lowest recorded for the last 20 years. In Lanarkshire, the Diseases of Animals Lanarkshire Order of 1907 makes it a misdemeanour not to report any sudden or unexplained death in cattle, and it is thus presumed that there were no unreported cases. All anthrax carcasses are removed in a special box for destruction under steam pressure at a knackery. Mr. Begg informs us that there has been no case of human anthrax traceable to an outbreak in cattle for over 20 years, nor has the Ministry of Agriculture in that time failed to corroborate the diagnosis of his department. It is also stated that in no outbreak was there the least suspicion that the dairy produce of any of the herds involved had become infected. For ourselves we cannot recall any reported case of anthrax in man being attributed to the milk supply.

Mr. Begg regrets that the Milk Pool formed in the South-West of Scotland has failed during the year, as on this account milk prices have appreciably fallen.

We read that no special administrative difficulties worthy of note have been met with and that the veterinary inspection of cows was limited to a single visit per annum except for a few herds which were visited twice and some even three times. A total of 1,754 visits were paid to herds and 34,455 cows examined.

Arrangements have now been made to increase the dairy inspection of all registered herds to three visits a year and for this purpose at the end of last year two whole-time temporary assistants were appointed. This also entailed additional assistance being necessary in the office and this was obtained. Inspections were carried out on non-registered premises, even the single cows of shepherds and others being examined.

A general improvement in method and equipment is reported although, as is only to be expected, a few individuals still lag behind. We are told that "during 1930 a dozen or more dairymen installed one form or another of a device comprising essentially a taut wire suspended at a height of about 15 inches above the anterior edge of the grip to prevent cows from standing back in the grip . . . The best type of the apparatus serves its intended purpose very well, but it is not beyond criticism."

The feeding of the cows was found to be good and the installation of water bowls in byres has increased from about 281 to more than 300. Attention is drawn to the prevalence of contagious abortion and surprise is expressed that even now the evidence of undulant fever is conspicuous by its absence.

The Tuberculosis Order.—Mr. Begg opines that when the veterinary inspection of dairy cows is increased there will also be a considerable increase in the number of cases dealt with under the Order. Last year 256 cattle were slaughtered, including 64 cows with tuberculosis of the udder (of which 47 or 81 per cent. were found on herd inspection) 40 suffering from tuberculous emaciation and 152 with chronic cough with definite clinical symptoms. In discussing the cows taken under the Order in which diagnosis was aided by the use of the tuberculin test, 44 of which were found to be positive and amenable to the Order, we note the following rather surprising statement: "It is worthy of note that in cases of acute phthisis (miliary tuberculosis of the lungs) and in other acutely febrile cases, involving extensively the pleuræ and peritoneum, when the clinical evidence of disease afforded by the ordinary methods of examination is not too conclusive, the ophthalmic has proved much more helpful than any other tuberculin test, for it has yielded in many cases a positive result at an early stage when the intradermal result was quite negative or only mildly suggestive of reaction."

Under Section 12 of the Act, three cows were tested with tuberculin on one farm and 11 on another. Of the latter, we are told "Ten of the cows reacted fully and one yielded a comparatively small reaction rather positive in character. Of these reacting animals, all regarded as tuberculous, none was at that time amenable to the Tuberculosis Order."

There are 14 "certified" herds in the county, comprising about 750 cows which yielded approximately 370,995 gallons of milk and 25 "Grade A (T.T.)" herds with 1,086 cows which produced about 515,662 gallons of milk. The demand for this high-class milk has fallen off considerably and much of the milk has to be sold as "ordinary" milk. Under the Milk (Special Designations) Order (Scotland), 27 herds were tested with tuberculin once and 12 twice, out of which 33 cows reacted or 0·84 per cent. per herd per annum. There were ten, seven and four reactors respectively in each of the three herds, while two had two reactors and eight had one each.

Mr. Begg refers to a previous report in which he gave his conclusions and those of his Assistant "in regard to controversial problems associated with the tuberculisation of cattle." "*Inter alia* were discussed," he says, "the incubation of tuberculous infection and the development of the capacity to react, and emphasised our view that, after exposure to infection, the period of latency or incubation before the capacity to react to tuberculin is established varies within comparatively wide periods of time." "Added experience," he says, "has only served to confirm these opinions, and although at the time of publication they were not entertained by the great majority of the members of the veterinary profession there is now considerable evidence that they are steadily gaining acceptance." Tables are appended to the report showing the detailed nature of the work carried out by Mr. Begg and his Assistant, and a map attached giving the number of tuberculous cattle killed under the Tuberculosis Order according to the districts concerned.

N.V.M.A. Divisional Reports.

South-Eastern Division.*

Meeting at the Wellcome Research Laboratories.

The Summer Meeting of the Division was held on June 17th, at the Wellcome Physiological Research Laboratories, Langley Court, Beckenham, Kent. The following members were present :—Messrs. H. P. Hogben (President), Perrin, Marks, Gooch, Dier, Edgar, Rose, Taylor, Halfhead, C. Roberts, Crowhurst, Cornish-Bowden, Hodgman, McEwen, Cattell, R. S. Roberts, Mason, Bateman, Gillard, and the Hon. Secretary. The visitors included Messrs. Wright, Hubble and Prentis.

Apologies for absence were received from Messrs. Hobday, Dunkin, Head, Morgan, Barrett, Whicher, Ebbetts, T. F. Hogben, Richardson and Buxton.

A short business meeting was held, at which the minutes of the last meeting were taken as read and were signed by the President. The following nominations were announced :—J. McL. Laing, Esq., Ealing, proposed by the Hon. Secretary, seconded by Mr. Bateman ; L. Hughes, Esq., Ministry of Agriculture, proposed by H. Gooch, seconded by J. B. Dier.

The President then called on Mr. A. Spicer (Oxted) to make any further remarks on his paper on " The use of Manganese in Veterinary Practice with special reference to the treatment of Mastitis." Mr. Spicer summarised briefly the paper he read at the last meeting and which was published in the *Veterinary Record*. A brief discussion followed, in which the President, Messrs. Roberts, Taylor, McEwen, Rose and others took part.

Demonstrations.

The members now assembled in one of the laboratories, where Mr. Spicer demonstrated the oral administration of Avertin as a method of producing narcosis in the dog. Mr. Spicer brought with him the necessary apparatus, including a mouth gag which proved to be too large for the dog being narcotised, but which was used on a dog of larger size later. He also demonstrated his special apparatus for preventing a return flow of fluid following the injection of Avertin per rectum. Several of the members present criticised the methods and Professor Wright, who demonstrated the rectal injection of Avertin at our last summer meeting, made useful comments.

Exhibits.—While the various dogs were being treated, Mr. A. Cornish-Bowden and Mr. Hodgman showed an interesting specimen of a dog's spleen, which was actually bifid. The history was that the dog had been run over several months ago but had fully recovered. Eventually the dog died from another cause and *post-mortem* examination revealed the condition of the spleen. The opinion of the meeting was that the condition was congenital and not related to the accident.

A most interesting and instructive demonstration was next given by Miss G. A. Warrack, B.Sc., of the veterinary department, on Fowl Paralysis and Coccidiosis in chickens. She explained the course of these diseases and illustrated her remarks by the exhibition of actual specimen and photographs. This demonstration was thoroughly enjoyed and appreciated, as evidenced by the reluctance of the members to pass on to the next exhibit.

Mr. J. K. Bateman showed specimens of intestine and mesenteric glands affected with Johne's disease, microscopic sections of infected tissues and cultures of the causal organism. He also explained the technique involved in the application of " Johnin " as the diagnostic agent.

Mr. J. H. Mason had prepared cultures and microscopic specimens of some of the commoner micro-organisms causing diseases met with in veterinary practice. An examination of these proved of considerable interest to many members.

The Hon. Secretary exhibited horses on which intra-palpebral testing had been carried out to ascertain the presence or absence of normal anti-diphtheria toxin.

Lastly, Captain F. C. Gillard, who had brought with him his cinematograph apparatus, showed films of general interest. He apologised for the small number of films he had shown and hoped that the exhibits would prove a stimulus to members to film interesting cases when opportunity arose.

Tea was then served, after which the President proposed votes of thanks to Dr. O'Brien (the Director of the Laboratories) and to the veterinary staff for their efforts. Mr. H. Taylor and Captain Taylor supported the President. The Hon. Secretary replied, apologising for the absence of the Director and assuring the members that it had been a great pleasure to have them at the Laboratories. He also intimated that one of the staff, Mr. J. H. Mason, a Fellow of the Society, was leaving soon to take up a post in South Africa.

There was general agreement that an interesting and instructive afternoon had been spent.

Thomas Dalling, *Hon. Secretary.*

* Received for publication July 23rd.

Yorkshire Division.*

Summer Meeting at Ilkley.

Demonstration of the Double Intradermal Tuberculin Test.

The Summer meeting was held on Friday, July 24th, when the main business was a demonstration of the Intradermal Tuberculin Test, and for this purpose the society was favoured in having the permission of Mr. J. A. Chapman, of Black Bull Farm, Burley-in-Wharfedale, to carry out the test on a portion of his herd of milk cows. For this purpose 21 cows were available and were accommodated in a good roomy byre, which gave every facility for the 41 members and visitors who were present. The President, Mr. G. E. Bowman, presided throughout the meeting, and Mr. R. E. Glover, of the Institute of Animal Pathology, Cambridge, was present to demonstrate and interpret the Tuberculin Test.

An Interesting Case.—Prior to the main business, Mr. A. H. Watson, of Bradford, presented to the meeting an interesting equine clinical case. The subject of this was a draught half-bred gelding, about 16 years old, which was showing a cankerous condition of all four limbs, in none of which was there any evidence of canker of the

* Received for publication July 27th.

soles or walls. The disease chiefly affected the coronary bands and also the "chestnuts" but in none of the feet were the usual symptoms of canker shown. Mr. Watson explained that the horse had had no illness or febrile disturbance, nor had it shown any lameness: all systemic treatment, including the new spleen extract treatment, had failed, and the condition appeared to be incurable. The case aroused much interest.

The Demonstration.

Mr. Bowman introduced Mr. Glover to the meeting, and before proceeding to the examination of the herd Mr. Glover gave a short address, stressing a few of the salient points in the application of the test and its interpretation. For this latter purpose he specially drew attention to one cow which might be termed commonly a doubtful reactor: he pointed out the importance of keeping in one's mind the definite characteristics of the negative result and classing all others deviating therefrom as reactors.

The meeting then proceeded to an examination of the herd and all present had the opportunity of reading the result of the test, after which Mr. Glover gave the correct interpretation.

Mr. Rabagliati expressed the gratitude of the meeting to the owner of the herd, Mr. J. A. Chapman, and thanked him for the excellent facilities granted and all the trouble he had taken to enable the demonstration to be carried out.

The meeting then adjourned to the Middleton Hotel, Ilkley, where tea was taken. At the conclusion of the meal Mr. Bowman conveyed the thanks of the Society to Mr. Glover for his attendance and service in coming to the meeting and giving his experience on such an important subject. Mr. Bowman also expressed the thanks of the meeting to Mr. Rabagliati for all the trouble he had taken in making the arrangements at the farm and carrying out the preliminary inoculations of the test.

Smith Memorial Fund.—Mr. Bowman read a letter from Dr. Fred Bullock, calling the attention of the Society to the Sir Frederick Smith Memorial Fund. It was resolved (having been proposed by Mr. Rabagliati and seconded by Mr. Holland) that a donation of £5 be given to the Fund.

The Balance Sheet of the Social Meeting held in March was placed before the members, and on the proposition of Mr. Bowman, seconded by Mr. Whitehead, it was resolved that the balance of £5 10s. 3d. be sent to the Victoria Veterinary Benevolent Fund.

Illness of Mr. Gaunt.—Mr. Clarkson said he much regretted to inform the members of the very grave illness of one of their most esteemed fellows, Mr. John Gaunt. The Secretary was instructed by the meeting to write Mr. Gaunt, expressing the sympathy of the Society and its hopes for a speedy recovery.

A vote of thanks to Mr. Bowman for his presidency over the meeting terminated a very successful day.

S. Sharp, *Hon. Secretary.*

Marriage.

Jones—Stent.—On August 11th, at St. John's, Old Trafford, the Rev. Hugh Basil Jones to Marie, elder daughter of the late E. H. Stent, M.R.C.V.S., and Mrs. Stent, Ash Lodge, Stretford.

North Midland Division.*

Operations at Sheffield.

A meeting of the above Division was held at the Corporation Abattoir, Sheffield, on July 16th, 1931.

Mr. R. Hudson (Retford) occupied the Chair, and there were also present Messrs. Abson, Angler, Canning, Evershed, Fletcher, Green, Marrison, Nixon, Scott, Thompson, Tullis, Walker and the Hon. Secretary. The visitors were Messrs. Hodgson, Laycock and Richardson.

Apologies for absence were received from Messrs. Bowett and Ludlow.

Arising out of the Council Minutes, it was reported that Mr. Lloyd had been presented with a cheque from the funds of the Division, as authorised by the last meeting, as a token of respect for his past services to the Division as Hon. Secretary.

It was agreed that the Council's recommendation, that the subscription of £1 1s. to the National Horse Association of Great Britain be renewed, be approved.

It was also agreed that the deficit on the social evening be paid out of the funds of the Division.

A vote of thanks was accorded to Mr. Hudson for providing the prizes at the social evening and also for so kindly entertaining the members and their friends to tea that afternoon.

Exhibits.

A specimen of a cystic tumour removed from the larynx of a horse by Mr. Hudson, and similar to one he had shown at a previous meeting, was exhibited and the method of removal described.

A cow which had milk fever 10 days previously and had developed tuberculosis of the udder with great increase in the size of the affected quarter during that time was arranged for slaughter under the Tuberculosis Order by Mr. Sampson and was examined by the members.

Operations.

The next business of the meeting was a series of operations carried out by the President, the subjects being a Sheffield Police horse with obscure lameness and a cow for the operation of ovariotomy, which was provided by the Hon. Secretary, and a bitch and kitten for ovariotomy, provided by Mr. Fletcher.

The horse was anæsthetised by 5 per cent. cocaine in the plantar nerves by Mr. Hudson, and in less than five minutes the animal went sound, showing that the lameness was situated in the foot. A discussion as to the nature of the disease and the form treatment should take followed.

The cow was then cast and chloroformed by the Hon. Secretary and Mr. Hudson operated through the left flank and removed the ovaries by means of an écraseur fitted with a wire in place of a chain. The operation was quickly performed and the muscle and peritoneum were sutured by interrupted sutures and then the skin in a similar fashion.

The next operation was performed on the kitten. It weighed 3 lbs., and 7 minims of Avertin, dissolved in 12 c.c. distilled water at a temperature of 40° C., was injected per rectum into the colon by means of a small catheter

* Received for publication July 22nd.

to the end of which a syringe containing the 3 per cent. solution of Avertin was attached, and the solution allowed to run slowly into the catheter. The kitten's hind quarters were raised and no escape of the fluid occurred. In less than ten minutes the kitten showed signs of anæsthesia and required no further restraint. The operation was carried out by the President in the flank position, but on commencing to incise the skin the kitten showed some twitching and a few drops of chloroform on cotton wool were administered, which completed the anæsthesia and the operation was carried out very successfully without any further anæsthetic being required.

The bitch was 15½ lbs. weight and 35 minims of Avertin in 70 c.c. of distilled water at 40° C. were given in a similar manner, using a slightly larger catheter. It was again successful in producing anæsthesia, a few drops of chloroform being merely placed on cotton wool in front of her nose to complete the anæsthesia and the operation proceeded with. The dosage was followed from Professor Wright's tables in the *Veterinary Record* of June 14th, 1930, and mixing of the Avertin and water was carried out in a measure glass in a hot water bath at 40° C. by constant stirring of the Avertin and water for at least five minutes until the former was dissolved.

The discussion on the use of Avertin showed that it was particularly simple to administer as an anæsthetic, especially for the cat, the animal being simply held by the skin of the neck in one hand and made to stand on its front legs by the hind legs being raised and held in the other hand of the assistant until anæsthesia commenced.

A vote of thanks to the President for performing the operation and to Mr. Fletcher and the Hon. Secretary for providing the animals, terminated the meeting.

W. Tweed, *Hon. Secretary.*

Ministry of Agriculture's Livestock Returns for England and Wales.

Returns published on August 1st by the Ministry of Agriculture revealed that there were general increases in the numbers of live stock on agricultural holdings in England and Wales at June, 1931, with the exception of horses, which, with a further reduction of 2·4 per cent., continued the decline recorded in each of the past ten years, though there has been a slackening in the rate of decrease. The total number of cattle (6,064,300) shows an increase of 3·7 per cent. Sheep (17,745,000) increased in number by 8·8 per cent., while pigs (2,777,700) showed an addition of 20·2 per cent.

Commenting on the above returns, the Agriculture Correspondent of *The Times* says:—

"The most satisfactory feature of the returns is the all-round increase in the head of cattle, sheep, and pigs in the country. The reduction recorded a year ago has been more than made good, and the calamitous waste of thousands of acres of arable land laid down to grass, with no corresponding increase in live stock, is averted, at any rate for the present. Nevertheless the grass land of England and Wales is lamentably under-stocked with 6,000,000 cattle and 17,750,000 sheep. Lack of cash is, of course, the limiting factor. Falling prices year after year have left arable farmers without adequate capital for the proper stocking of their new grass land. It is unfortunately the general experience that the working capital that sufficed for corn growing is not nearly adequate for stock farming. As was inevitable, with the continuous depression in grain prices the corn acreage has fallen off still further. The beet crop has lost much ground despite the temporary assistance by the Government. In the circumstances it is not surprising to find that agriculture is employing 25,200 fewer workers than a year ago.

Ireland's Live Stock.

Cattle, pigs and sheep are all estimated to have increased in numbers in the Irish Free State in 1931 compared with 1930. The following estimates on June 1st, 1931, were made by applying to the known figures for June 1st, 1930, percentage changes calculated from the changes in 629 District Electoral Divisions, out of 2,990, for which specially early figures were obtained.

Live Stock.	As Enumerated 1930.	As Estimated 1931.	Percentage Changes. 1929 to 1930, as Estimated.	1930 to 1931.
Cattle:	No.	No.	%	%
Milch Cows ...	1,225,000	1,223,000	— 0·5	— 0·1
Other Cattle:				
Under 1 year	938,000	986,000	— 7·1	+ 5·1
1 to 2 years	875,000	884,000	— 0·6	+ 1·0
2 years or over	1,000,000	949,000	— 2·0	— 5·1
Total Cattle	4,038,000	4,042,000	— 2·5	+ 0·1
Pigs:				
Sows	111,000	123,000	+15·6	+10·0
Other Pigs ...	941,000	1,098,000	+ 9·9	+16·7
Total Pigs ...	1,052,000	1,221,000	+10·5	+16·0
Sheep	3,515,000	3,618,000	+ 1·8	+ 2·9
Poultry	22,900,000	22,467,000	+ 1·8	— 1·9

"Preliminary estimates of the acreage of crops and number of live stock in the Irish Free State reflect the influence of the present condition of agricultural markets on the policy of Irish farmers," says *The Farmer and Stockbreeder* of July 27th. "The area of corn crops is down quite substantially over a period of five years, and the numbers of all kinds of live stock, except poultry, have increased. But Ireland is a live-stock country, and the difference between the relative importance of stock-raising and arable cultivation in the Irish Free State as compared with England and Wales is striking.

"The pig, traditionally the animal most closely associated with Irish farming, is substantially more numerous than two years ago, and the Irish Free State has approximately six pigs for every seven acres of arable land. In England and Wales, even with the decrease in arable cultivation, we have still a full four acres of arable land for every pig. Yet the disparity is not so great as in the case of cattle, for the Irish Free State has about three for every acre of arable while we have only three for every five acres. And although not considered a sheep country, Ireland has about 2½ sheep per acre of arable land, while we have little over 1½.

"These figures do not prove that one country must be wrong if the other is right, but they do show, quite apart from year-to-year changes, the enormous difference between the agricultural systems of the two countries—a difference due, in part at least, to climatic influences."

Veterinary Inspection in the Counties.

Retrograde Ayrshire Proposal Defeated.

"There was a brief but spirited discussion at the meeting of the Ayr County Council on Tuesday over the reduction of £1,000 in the Public Health estimate," says the *Ayrshire Post* of July 31st. "It appeared from the minute that it was agreed to take no action in regard to a proposal to reduce the number of inspections of dairy herds from three to two per annum, which meant that a saving would have been effected in the veterinary services.

"Mr. R. Smith, Kilwinning, moved the approval of the minute and this was seconded.

"Mr. Kirkland, Kilwinning, moved as an amendment that the matter be remitted back so that the decision with regard to the reduction of £1,000 in the veterinary services should be given effect to. The reduction of £1,000 had already been made in the budget which was passed two months ago, and now when this had been agreed to the Committee came back and declared that the reduction previously agreed upon could not be carried out. He understood that two inspections were all that were required under the Act, and there could be no real reason for overturning the decision.

"Colonel Houldsworth, of Kirkbride, said they learned with great surprise of the suggestion to do away with one of the veterinary officers and that there would be only two instead of three inspections of dairy cows. It would be a great mistake to reduce the present veterinary staff and he hoped the County Council would be against the proposal.

"Commander Billyard Leake said it would be foolish to run any risk by the reduction of their veterinary staff. There had been 60 outbreaks of foot-and-mouth disease in Scotland recently and Ayrshire had escaped narrowly. The outbreaks cost £27,000, and now they proposed to save this amount on an important service.

"Mr. Niven, Sorn, said Ayrshire prided itself on its dairy herds, and hitherto the County Council had made a bold effort to assist in producing a pure milk supply, and in that the veterinary officers had been well supported by the farmers. Speaking as a practical farmer he did not wish to flood the county with a lot of unnecessary veterinary officers, but he did say that if they wished to clear out tuberculosis from the cattle and the milk supply it was very necessary that their officers should be there to make regular inspections. While one inspection per annum might be sufficient in respect of some herds, one per month would be required in a great many herds. In cutting down the expenditure on this department of £1,000 they would be hampering the veterinary work and would not be assisting the farmers in supplying the county with that clean butcher meat and pure milk supply that they would like to see increased in the county.

"Mr. Kirkland said he should like to know if the two inspections as reconsidered by the Public Health Sub-Committee conformed with the requirements of the Act.

"The Chairman said the answer was in the affirmative.

"Mr. Brady said it was the minimum number of inspections.

Ex-Bailie Howie, Prestwick, said it was not the requirements of the Act they were out to enforce but the needs of the case and the Committee ought to bear that in mind. The necessity was apparent and it would be unwise to adopt the amendment.

"On a division ten voted for Mr. Kirkland, and the minute was carried by a large majority."

. . . . .

Part-time System Abandoned in Surrey.

"The appointments of seven part-time veterinary surgeons are to be terminated at the end of the year, and their duties are to be undertaken by the Council's whole-time veterinary staff, arrangements being made for the services of four private veterinary surgeons to be available in cases of emergency, or special urgency," reports the *Surrey Comet*. "The fees and expenses of the part-time officers whose services are being dispensed with amount to about £400 per annum, but the new arrangement would involve additional expenditure in respect of the permanent staff of about £100 per annum for travelling and other consequential expenditure, but there would be an ultimate definite saving to the Council and advantages in the matter of service."

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Essex Diseases of Animals Sub-Committee and Compensation.

At a recent meeting of the Diseases of Animals Sub-Committee of the Essex Agricultural Committee it was reported that, during the quarter ended June 30th, there had been 124 outbreaks of swine fever notified, of which 24 were confirmed; anthrax, seven reported, one confirmed; parasitic mange, two both confirmed; sheep scab, three reported, but none confirmed.

Under the Tuberculosis Order of 1925, the Clerk reported that there were 236 cases during the quarter, and the total compensation paid was £1,800 3s. 9d. The amount refunded by the Ministry was £1,350 2s. 10d. There had been received for salvage £463 5s.

A letter had been received from the Cheshire County Council stating that they had adopted a report of their Diseases of Animals Sub-Committee, expressing the opinion that it was desirable, in order to induce the early notification by farmers and others of suspected cases of tuberculosis among their stock, and so to facilitate the operation of the Tuberculosis Order in the interests of public health, that the provisions of the Tuberculosis Order of 1925 should be amended in the direction of paying greater compensation for animals suffering from tuberculosis.

The Chairman said what Cheshire wanted to do was to pay three-quarters of the value for an emaciated animal. Under the present regulations, three-quarters of the value was paid for animals in a fair state, but if the animals were allowed to become emaciated, only one-quarter was paid.

Mr. A. Bradridge remarked that it would cost them a great deal more.

The Chairman said it seemed to him that the proposal would encourage cowkeepers to keep animals as long as they possibly could. He hoped the Committee would not agree to it.

On the motion of Mr. F. W. Paul, it was agreed that the letter should lie on the table.

Why Horse-Breeding should Revive.*

Statistics have been given in which it is shown that the horse beats the motor with regard to cheapness for delivery in towns. This explains the reason why breweries, railway companies, and other businesses with short-distance heavy traffic are displacing motors by horses. The repercussions of this policy upon agriculture generally will be all to the good. A good deal, however, still remains to be done with the view of further popularising the horse in trade circles. As Britishers, we seem to have a natural propensity for looking on the black side of things, and grousing upon every suitable occasion. It would be far better for agriculture and for the country generally if we were to try to take a more optimistic view of business possibilities. If brewery and railway companies and other hard-headed business corporations rehabilitate the horse in their estimation as a means of transport, it is up to farmers to speak optimistically also on the horse's behalf and to further these efforts with the desire to get others to replace motors by horses.

Agricultural Opinion.

It has to be borne in mind that many thousands of farmers and smallholders still use horses for going to market and for fetching goods from the station. The motor is not of such universal utility on the small and hillside farms as the "friend of man." It is indeed surprising to find that, so far from the horse becoming a back number, there are definite signs of a revival of heavy

* Leaflet No. 67 (b) issued by the Rural Information Bureau.

horse-breeding. It appears as if the pendulum is to some extent swinging the other way, and the heavy horse and vanner are returning to favour. Only recently in the *Farmer and Stockbreeder* an editorial note appeared which intimated that heavy horses were a distinctly better market. Our contemporary stated:—"The demand is increasing. Values have risen appreciably, and look like rising still further. Why is this? There may be a slight decrease in the number being bred, though I rather doubt it. The demand certainly does not come from farmers, for, not only has there been a large decrease in arable land, but also a considerable increase in the number of tractors employed, the number of tractor licenses for this year showing an increase of approximately 30 per cent. We must look for some other reason. The real reason appears to be that our best customers, the cities and towns, are coming back to horses. Breweries, railway companies, and other businesses with short-distance heavy traffic are finding horses more economical than mechanically-propelled lorries. A friend of mine, who should know, told me only a week ago that there are more horses in the London streets to-day than there have been for several years."

Whatever views we may hold with regard to the prospects, most people will be of opinion that it is a hopeful sign to British agriculture if the breeding of heavy horses is likely to become popular.

A Word for the Horse.

In view of the fact that there are considerably over one million horses in agricultural use at the present time, and that the number for non-agricultural purposes must be considerably in excess of this, it would be well for those who consider the horse to be a back number to revise their views. Remarkable comparative costing figures compiled by municipal authorities have shown that the cost of horse-drawn vehicles is considerably less than for mechanically-propelled. This fact was emphasised by the National Horse Association about three years ago. It behoves all those who are directly or indirectly interested in horse-breeding and agriculture to put in a word in favour of the horse wherever possible. Motors do not consume hay, straw, or corn. The greater the number of horses in the country, the better for the agricultural industry as a whole, and if it can be shown, as it can be, that the horse is more economical than the motor, especially for short distances, it is up to the farmer to tell the fact abroad.

Is the Horse Coming Back?

The provincial and farming press during the past few weeks has contained several significant references to the prospects of horse-breeding. It is not only from one district that reports are to hand of distinct encouragement to those interested. A Lincolnshire contemporary says:—"From the Horse Breeding Societies one hears quite encouraging reports and the prices realised at recent sales indicate that trade is far from stagnant. It is significant that in some parts of the country there is a growing demand for work horses, but exactly what the significance is, must be left to others to determine. One farmer told me that he had to get horses because he could not afford machinery, and that another found horses suited his little place."

A Yorkshire contemporary raises the question as to the best method of meeting the needs of the time in regard to showing, and stated that this is one of the questions which must be considered by all societies and not least by those devoted to horses.

A Word from Wales.

According to press reference there were not half enough horses at Bridgend Fair, held at the beginning of April, and it is stated that the fact that there were so many buyers present was regarded by the farmers as evidence that the horse is coming back to his own.

Whilst there are those encouraging signs of a revival of interest in horses, it has to be admitted that the authorities in London are not making it any easier for those interested in horse-breeding. The National Farmers' Union draws attention to the injustice of proposed restrictions in London streets. This was the subject of strong protest recently.

Action by the National Horse Association.

At the June meeting of the National Horse Association of Great Britain the President reported that a deputation arranged and headed by the National Horse Association and including numerous organisations interested in horse transport in London, has been received by the London and Home Counties Traffic Advisory Committee with regard to the proposed Oxford Street Draft Regulations and have protested most strongly against regulations affecting horse-drawn traffic.

"The Council, in considering the representations, expressed the hope that the representations submitted would be carefully considered by the Minister of Transport, as they felt that the restrictions would specially hit the small trader with poor financial resources. It has been proved and admitted by the Minister of Transport himself that horse transport was the most economical form of transport under certain conditions, and it was essential that the right of using the most economical form of transport should be available to all organisations in the interests of trade and industry."

We are given to understand that although the Ministry of Transport could not agree with the National Horse Association and has adopted the Order to ban horses from Oxford Street, the Order is to come up for consideration again later.

The Cattle Industry of Northern Ireland.

"The cattle industry of Northern Ireland is of a two-fold character—the raising of store cattle for export to Great Britain, and the production of milk and milk products," says *The Scottish Farmer* of August 1st. "The total output of milk in Northern Ireland has been estimated at 98,000,000 gallons, of which only about 30,000,000 gallons are required for human consumption in liquid form, and there is thus always a large surplus available for butter-making. The Ministry of Agriculture of Northern Ireland encourages all branches of the cattle industry. It spends large sums on instruction in the best methods of butter-making, and assists also in the marketing of dairy produce; and in connection with its cattle improvement schemes it takes cognisance of the two distinct branches of the cattle industry and therefore gives special attention to dual purpose cattle. The production of store cattle and the production of milk are so intimately associated on almost every farm in the six counties of Northern Ireland that no live stock policy could hope to attain success if either of these aspects were neglected. A good supply of milk is essential for the manufacture of butter; and good calves are essential for the store cattle trade. Therefore, the Ministry encourages, and will continue to encourage, the breeding of dual purpose cattle that are capable of giving high yields of milk and also of breeding good quality calves.

"The lines along which the Ministry is developing and improving the cattle of Northern Ireland are indicated in its ninth annual report dealing with the year 1929-30. The Shorthorn breed is regarded as the backbone of the cattle industry. The total number of bulls awarded ordinary premiums under the cattle breeding scheme in 1930 was 483, and these included 209 pure-bred Shorthorns, 123 pure-bred Dairy Shorthorns (94 with sire and dam registered and 29 with dam only registered), 25 registered non-pedigree Dairy Shorthorns, 108 Aberdeen-Angus, and 18 Galloways. Bulls of the Galloway breed are eligible for premiums only within a prescribed district in the mountainous area of Co. Antrim, for which that breed is particularly suited, and which specialises in producing a type of store cattle that is in demand in the South-West of Scotland. The highest premiums are paid in respect of pedigree Dairy Shorthorn bulls—£20 for those registered on both sides, and £17 for those registered on the dam's side only. Premiums of £15 are payable in respect of Shorthorn and Aberdeen-Angus bulls, and also in respect of Herefords, but there do not appear to be any Herefords in Northern Ireland, although that breed is popular in the Free State; and in respect of non-pedigree Dairy Shorthorn bulls and Galloway bulls premiums of £13 are

payable. In addition to the 483 premium bulls, there were also standing for service in Northern Ireland last year 260 ' special term ' bulls (animals up to premium standard, but offered on more convenient terms to farmers in the poorer districts), 14 double dairy bulls supplied to milk recording associations, and 12 ' subsidised ' bulls—a total of 769 bulls altogether. The ' subsidised ' bulls are high-class pedigree bulls, bought by groups of farmers owning a reasonable number of pure-bred cows, with the object of grading up the pure-bred herds, so that Northern Ireland in future may have an increased supply of bulls available to meet the demand for premium animals. The Ministry grants a limited number of subsidies each year for the purchase of these high-grade bulls, four such subsidies being given in the year 1929-1930. It will be recalled that one of those subsidised bulls won the Shorthorn championship at the Royal Ulster Show both last year and this, while another was reserve champion this year."

The Purpose of Whipsnade.

Open Air for Animals.

The Scientific Correspondent of *The Times*, writing in that paper on August 3rd, says :—

" The Zoological Society of London is not an endowed or State-supported institution, but has to live by the subscriptions of its Fellows and the favour of the public, so that its new experiment, to succeed, must be attractive. Many and costly features, of no direct benefit to the animals, have had to be provided. The natural beauties of a lovely site have had to be revealed and enhanced by the arts of landscape gardening. . .

" So far as the animals are concerned, the purpose of Whipsnade is intermediate between that of an ordinary zoological garden and that of a national park or reserve. In the first the endeavour is made to collect, so to speak, a sample of the richness of the animal kingdom, bringing into the menagerie natives of every country and every clime. In a sense it is a museum, with the difference that the animals are alive. The arrangements are frankly artificial, and, so far as is possible without grave detriment to the living creatures, visibility to the public is the first requisite. The cages, houses, and enclosures are relatively small, often in houses to which the public also have access, or at least with paths so close up to them that the animals have little privacy. Natural surfaces have to be replaced by perches and shelves, concrete or brick or wood. Everything has to be cleaned and disinfected, unnatural bedding or sleeping boxes provided, and all kinds of artificial arrangements for heating and ventilation supplied.

" In most cases even with gregarious creatures, companionship is difficult to arrange as in narrow quarters dangerous quarrelling is frequent. The wonder is that the inhabitants of a menagerie so often adapt themselves to their entirely unnatural surroundings and become tame and docile.

The Presence of Man.

In the National Park or Reserve, such as the Kruger Park in South Africa, the Parc Albert in the Belgian Congo, or the great reserves of Canada and the United States, the fundamental purpose is to preserve a section of wild nature in its primitive state. Animals and plants foreign to the region are not introduced. No attempt is made to protect the animals from each other except that the wardens doubtless try to destroy rogue or diseased individuals, or even to reduce the numbers of any species that threaten to upset the natural balance. How far, under these conditions, wild animals will lose their acquired fear of man, when they have learned that they have nothing to fear from visitors, is not known yet. But there are encouraging signs; certainly the bears in the Yellowstone neither attack man nor avoid him, but are almost a nuisance to picknickers and campers, as they have learned to beg and to steal.

" In the English countryside, as at Whipsnade, there are not enough native creatures to make a zoological park. As soon as there is sanctuary there are plenty of small native birds, resident or migrant, but the larger birds and most of the mammals have to be introduced. Internal enclosures are necessary both for the visitors and for the animals. A few hundreds or even thousands of visitors in some square miles of National Park present a very different problem from a possible 20,000 to 40,000 visitors in the 500 acres of Whipsnade. Carnivores and the larger herbivores must be kept apart from human beings and other mammals, and only certain species and even certain individuals can be allowed to wander over the unenclosed area.

" On the other hand, there are types of mammals, such as the smaller kangaroos, through whose enclosures visitors can certainly pass, and there are groups of creatures which, with care, may be assembled safely in African, Australian, or Asiatic panoramas. Whipsnade Zoological Park will have to develop its distinctive possibilities gradually."

Notes and News.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Aug. 22nd-28th.—N.V.M.A. Congress at Norwich.

Aug. 31st.—Meeting of the Editorial Committee, N.V.M.A., at 2 Verulam Buildings, Gray's Inn, W.C.1, 4.30 p.m.

Control of Rabies in Malaya.

During 1930, states the annual report on the administration of the Federated Malay States Police Force, there was reported only one case of rabies in the State of Perak. Ten were reported in Selangor, but none either in Negri Sembilan or in Pahang. In Selangor 3,961 dogs were injected by the Veterinary Department with anti-rabic serum, and 691 owners were prosecuted for having their dogs unlicensed.

Correspondence.

Iodoform as a Genital Antiseptic.

To the Editor of The Veterinary Record.

Sir,—In last week's *Record* I read with interest of Mr. Henry C. Wilkie's method of applying iodoform in quantity to the genital tract. It is a method which will commend itself to many practitioners. I, personally, shall adopt it in future in some uterine and most vaginal cases.

My method has been to introduce it with the hand and massage it well into the wall of the vagina and uterus: this is wasteful as some of it adheres to the hand and arm, but this cannot be avoided when massage is practised. There are many occasions, however, when this method is unnecessary and therefore Mr. Wilkie's suggestion is welcomed.

When using iodoform in almost any quantity it is necessary to advise the farmer not to use the milk for human consumption, on account of the tainting of the milk, for at least ten days, although it is suitable for calves or for giving to the cow to drink. It is also advisable, when possible, to put the cow for the same length of time into a separate building.

Yours faithfully,

Oscar Stinson.

" Charnwood,"
Appleby,
Westmorland.
August 16th, 1931.